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File: USPT

Nov 16, 1999

US-PAT-NO: 5987519

DOCUMENT-IDENTIFIER: US 5987519 A

TITLE: Telemedicine system using voice video and data encapsulation and de-encapsulation for communicating medical information between central monitoring stations and remote patient monitoring stations

DATE-ISSUED: November 16, 1999

INVENTOR-INFORMATION:

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APPL-NO: 8 / 933388

DATE FILED: September 19, 1997

PARENT-CASE:

CROSS REFERENCE TO RELATED APPLICATION This application claims priority to and the benefit of the filing date of copending provisional application entitled AN ELECTRONIC HOUSE CALL SYSTEM, assigned Ser. No. 60/026,986, filed Sep. 20, 1996, which is hereby incorporated herein by reference.

INT-CL: [6] G06F 13/00

US-CL-ISSUED: 709/230, 709/240, 709/205

US-CL-CURRENT: 709/230, 709/205, 709/240

FIELD-OF-SEARCH: 600/595, 600/509, 600/300, 709/246, 709/230, 709/240, 709/205

REF-CITED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/> <u>4259548</u>	March 1981	Fahey et al.	179/5R
<input type="checkbox"/> <u>4838275</u>	June 1989	Lee	128/670
<input type="checkbox"/> <u>5339821</u>	August 1994	Fujimoto	128/700
<input type="checkbox"/> <u>5434611</u>	July 1995	Tamura	348/8
<input type="checkbox"/> <u>5438607</u>	August 1995	Przygoda, Jr. et al.	379/38
<input type="checkbox"/> <u>5441047</u>	August 1995	David et al.	128/670
<input type="checkbox"/> <u>5488412</u>	January 1996	Majeti et al.	348/10
<input type="checkbox"/> <u>5502726</u>	March 1996	Fischer	370/94.1
<input type="checkbox"/> <u>5544649</u>	August 1996	David et al.	128/630
<input type="checkbox"/> <u>5553609</u>	September 1996	Chen et al.	128/630
<input type="checkbox"/> <u>5558638</u>	September 1996	Evers et al.	604/66
<input type="checkbox"/> <u>5576952</u>	November 1996	Stutman et al.	364/413.02
<input type="checkbox"/> <u>5619991</u>	April 1997	Sloane	600/300
<input type="checkbox"/> <u>5640953</u>	June 1997	Bishop et al.	128/630
<input type="checkbox"/> <u>5666487</u>	September 1997	Goodman et al.	709/246
<input type="checkbox"/> <u>5687734</u>	November 1997	Dempsey et al.	600/509
<input type="checkbox"/> <u>5810747</u>	August 1998	Brundy et al.	600/595

ART-UNIT: 276

PRIMARY-EXAMINER: Luu; Le Hien

ATTY-AGENT-FIRM: Thomas, Kayden, Horstemeyer & Risley, L.L.P.

ABSTRACT:

The present invention provides a packet-based telemedicine system for communicating video, voice and medical data between a central monitoring station and a patient monitoring station which is remotely-located with respect to the central monitoring station. The patient monitoring station obtains digital video, voice and medical measurement data from a patient and encapsulates the data in packets and sends the packets over a network to the central monitoring station. Since the information is encapsulated in packets, the information can be sent over multiple types or combinations of network architectures, including a Community access Television (CATV) network, the Public Switched Telephone Network (PSTN), the Integrated Services Digital Network (ISDN), the Internet, a local area network (LAN), a wide are network (WAN), over a wireless communications network, or over an asynchronous transfer mode (ATM) network. Thus, a separate transmission protocol is not required for each different type of transmission media. Rather, a single transport/network layer protocol is used for encapsulating the information in packets at the sending end and for de-encapsulating the information at the receiving end. Furthermore, by sending the information in packets, the video, voice and measurement data can be integrated and sent over a single network.

19 Claims, 5 Drawing figures